ematics to be made "practical"; how far should we insist upon rigorous demonstrations of principles taught?

5. Should students in one line of engineering, say civil engineering, be given problems of a different nature than those given to students in other lines, say mechanical or electrical engineering?

6. Should differential equations and least squares be required subjects in any engineering course? If so, how extensive should these courses be?

7. Should we have a separate course on "Applications," having for its purpose the cultivation of ability for rapid computation, and the use for engineering work of such instruments as the slide rule, planimeter, integraph, computing machines, etc.?

8. What opportunity for the study of mathematics should be given the engineer beyond the usual course in calculus? What courses might be made elective in the junior or senior years?

9. Should a first course in mechanics be given to engineering students in the freshman year and before the student has had calculus?

III. ADMINISTRATIVE QUESTIONS.

1. What qualifications should we insist upon for the instructor of engineering students in mathematics?

2. How much elementary mechanics should be taught in connection with the calculus? Should this elementary mechanics be taught by the mathematical department?

3. Should the work in descriptive geometry be made more mathematical in treatment? Should it be taught by the mathematical department?

4. What can be done in general to bring about a closer ralation between the teachers of mathematics and the teachers of engineering?

Pending the report of the Committee of Fifteen, these and other questions relating to the subject may well command the attention of those who wish to promote the scientific and industrial interests of the country as they are related to the training of men who are to be leaders in their development.

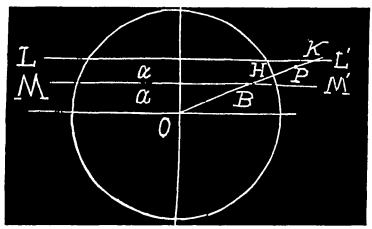
REMARK ON THE TRISECTION PROBLEM.

By E. B. ESCOTT, University of Michigan.

In the article "The Trisection Problem,"* in the May (1907) number of THE AMERICAN MATHEMATICAL MONTHLY; the so-called "Ceroid" is

*The merit of the article referred to lies in the fact that its author inadvertently rediscovered the famous curve and applied it in a new manner. The same author makes use of the hyperbolic curve for trisecting an angle, which of itself is well known, but which is presented in a new form worthy of attention. THE EDITORS.

nothing but the Conchoid of Nicomedes. This can be shown as follows:



In the figure, let LL' be parallel to the x-axis at a distance $2a$, and draw MM' parallel to LL' and half way between it and the x-axis. Let OHK be any line through O, and let P bisect HK. $OB=\frac{1}{2}OK$, $OH=r$. Therefore, $OP=\frac{1}{2}(OH+OK)=\frac{1}{2}r+OB$.

$\therefore OP-OB=BP=\frac{1}{2}r=$constant.

Therefore, the locus of P is a conchoid.

DEPARTMENTS.

SOLUTIONS OF PROBLEMS.

ALGEBRA.

No satisfactory solutions of Nos. 283, 284, 285, have yet been received. A solution of 283 will appear in the next issue.

287. Proposed by WALTER D. LAMBERT, 416 B Street N. E., Washington, D. C.

For what fraction of a year will there be the greatest difference between the interest as computed by the ordinary commercial rule and that computed by the rule of compound interest?

Solution by THEODORE L. DeLAND, Treasury Department, Washington, D. C.

Let x=the fractional part of a year; r=the rate per annum; \$1=the principal; rx=the simple interest; $(1+r)^x-1$=the compound interest; and y=the greatest difference.

When the time is less than one year the simple interest exceeds the compound interest, therefore

$$y=rx-(1+r)^x+1, \text{ a maximum.}$$

Differentiate, and we have, when m=the modulus,

$$dy/dx=r-(1+r)^x\log(1+r)/m.$$

Equate to zero and we have

$$(1+r)^x\log(1+r)=mr; \text{ or } x=\log[rm/\log(1+r)]/\log(1+r).$$

Also solved by G. B. M. Zerr.